<u>In the claims</u>

1. (Original) A method for de-embedding a device under test, the method comprising:

representing electrical characteristics of a test structure including a device under test using a set of test structure ABCD parameters;

representing electrical characteristics of a thru test structure using a set of thru S parameters;

partitioning the set of thru S parameters into a first set of partitioned S parameters and a second set of partitioned S parameters;

converting the first set of partitioned S parameters into a first set of partitioned ABCD parameters;

converting the second set of partitioned S parameters into a second set of partitioned ABCD parameters; and

using the first set of partitioned ABCD parameters, the second set of partitioned ABCD parameters, and the set of test structure ABCD parameters to produce a set of device ABCD parameters representative of intrinsic electrical characteristics of the device under test.

2. (Original) The method of claim 1 wherein representing electrical characteristics of a thru test structure using a set of thru S parameters further includes measuring electrical characteristics of the thru test structure to provide the set of thru S parameters.

3. (Original) The method of claim 1 wherein the representing electrical characteristics of a test structure including a device under test using a set of test structure ABCD parameters further comprises:

measuring electrical characteristics of the test structure to provide a set of S parameters; and

converting the set of S parameters into the set of test structure ABCD parameters.

4. (Original) The method of claim 1 wherein the first set of partitioned S parameters is characterized as a set of input S parameters and the second set of partitioned S parameters is characterized as a set of output S parameters.

5. (Original) The method of claim 4 wherein the set of input S parameters represent electrical characteristics of a two-port input network and the set of output S parameters represent electrical characteristics of a two-port output network.

6. (Original) The method of claim 4 wherein the set of thru S parameters are recoverable by cascading the set of input S parameters and the set of output S parameters.

7. (Original) The method of claim 4 wherein the using comprises:

cascading an inverse matrix of the first set of partitioned ABCD parameters with a matrix of the set of test structure ABCD parameters to produce an intermediate matrix; and

cascading the intermediate matrix with an inverse matrix of the second set of partitioned ABCD parameters to produce a matrix of the set of device ABCD parameters.

8. (Currently Amended) The method of claim 7 wherein the cascading an inverse matrix and the cascading the intermediate matrix each comprises performing a matrix multiplication.

9. (Original) The method of claim 5 wherein the set of thru S parameters comprise:

a thru input reflection coefficient S_{11}THRU,

a thru output reflection coefficient S_{22}THRU,

a thru forward transmission coefficient S_{21}THRU; and

a thru reverse transmission coefficient S_{12}THRU.

10. (Original) The method of claim 9 wherein the partitioning comprises:

defining an input reflection coefficient S_{11}IN of the set of input S parameters to be equal to the thru input reflection coefficient S_{11}THRU;

defining an output reflection coefficient S_{22}OUT of the set of output S parameters to be equal to the thru output reflection coefficient S_{22}THRU; and

defining an output reflection coefficient S_{22}IN of the set of input S parameters to be equal to an input reflection coefficient S_{11}OUT of the set of output S parameters.

11. (Original) The method of claim 9 wherein the partitioning further comprises:
defining a magnitude of a forward transmission coefficient $S_{21}IN$ of the set of input S parameters to be equal to a magnitude of a forward transmission coefficient $S_{21}OUT$ of the set of output S parameters; and
defining a magnitude of a reverse transmission coefficient $S_{12}IN$ of the set of input S parameters to be equal to a magnitude of a set reverse transmission coefficient $S_{12}OUT$ of the set of output S parameters.

12. (Original) The method of claim 11 further comprising:
defining the magnitude of the forward transmission coefficient $S_{21}IN$ and the magnitude of the forward transmission coefficient $S_{21}OUT$ to be equal to an Xth root of the magnitude of the thru forward transmission coefficient $S_{21}THRU$; and
defining the magnitude of the reverse transmission coefficient $S_{12}IN$ and the magnitude of the reverse transmission coefficient $S_{12}OUT$ to be equal to an Xth root of the magnitude of the thru reverse transmission coefficient $S_{12}THRU$.

13. (Original) The method of claim 12 wherein X corresponds to a ratio of geometric distances measurable between an input node to the device under test of the test structure and the input node to an output node of the test structure.

14. (Original) The method of claim 12 wherein X is substantially equal to 2 when the device under test is substantially at a midpoint between the input node and the output node of the test structure.

15. (Original) The method of claim 9 wherein the partitioning comprises:
defining an angle of a forward transmission coefficient $S_{21}IN$ of the set of input S parameters to be equal to an angle of a forward transmission coefficient $S_{21}OUT$ of the set of output S parameters; and
defining an angle of a reverse transmission coefficient $S_{12}IN$ of the set of input S parameters to be equal to an angle of a reverse transmission coefficient $S_{12}OUT$ of the set of output S parameters.

16. (Original) The method of claim 9 wherein a forward transmission coefficient $S_{21}IN$ of the set of input S parameters, a forward transmission coefficient $S_{21}OUT$ of the set of output S parameters, and the thru forward transmission coefficient $S_{21}THRU$ are determined to have the following relationship:

$$\angle S_{21}IN = \angle S_{21}OUT = (\angle S_{21}THRU) / X.$$

17. (Original) The method of claim 16 wherein X corresponds to a ratio of geometric distances measurable between an input node to the device under test of the test structure and the input node to an output node of the test structure.

18. (Original) The method of claim 9 wherein a reverse transmission coefficient $S_{12}IN$ of the set of input S parameters, a reverse transmission coefficient $S_{12}OUT$ of the set of output S parameters, and the thru reverse transmission coefficient $S_{12}THRU$ are determined to have the following relationship: $\angle S_{12}IN = \angle S_{12}OUT = (\angle S_{12}THRU) / X$.

19. (Original) The method of claim 9 further comprising:
defining an output reflection coefficient $S_{22}IN$ of the set of input S parameters and an input reflection coefficient $S_{11}OUT$ of the set of output S parameters to be equal to $0 + j0$.

20. (Original) The method of claim 1 further comprising:
providing a de-embedded representation of the electrical characteristics of the device with substantially no parasitic characteristic information in such representation; and
incorporating the de-embedded representation of the electrical characteristics of the device into a circuit design library.

21. (Original) The method of claim 20 further comprising:
designing a circuit using the circuit design library.

22. (Original) The method of claim 21 further comprising:
fabricating an integrated circuit including the designed circuit.

23-37 (Canceled).